

**Notice of Allowability**

Application No.

10/824,658

Applicant(s)

HESS ET AL.

Examiner

Laura E. Martin

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 11/19/07.
2. ☒ The allowed claim(s) is/are 1-7 and 9-19.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some\* c) ☐ None of the:
- ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |   |
|--|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 5. <input type="checkbox"/> Notice of Informal Patent Application                     |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date _____    | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                   |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|  | 9. <input type="checkbox"/> Other _____   |

  
**MANISH S. SHAH**  
**PRIMARY EXAMINER**

## DETAILED ACTION

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/19/07 has been entered.

### ***Examiner's Amendment***

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

#### ABSTRACT:

Changed:

*"The invention concerns a nozzle body (1) for a liquid droplet spray device for atomising a high viscous liquid substance such as perfume. A first and second substrate enclose a space for containing the liquid substance. Outlet means are arranged in the second substrate (4) and comprise at least one outlet*

*nozzle (19) and at least one output channel (20), said output channel (20) having straight side-walls.*

*Each output channel (20) has a stepped shape having a wider portion (20a) and a thinner portion (20b), the wider portion being arranged adjacent the space (3). The thinner portion (20b) contains a protrusion section (20c) protruding beyond the top surface of the second substrate (4) such that the exterior side wall of the protrusion section (20c) is at a substantially straight angle with respect to the top surface of the second substrate (4)."*

to

--The invention concerns a nozzle body for a liquid droplet spray device for atomising a high viscous liquid substance such as perfume. A first and second substrate enclose a space for containing the liquid substance. Outlet means are arranged in the second substrate and have at least one outlet nozzle and at least one output channel, said output channel having straight side walls. Each output channel has a stepped shape having a wider portion and a thinner portion, the wider portion being arranged adjacent the space. The thinner portion contains a protrusion section protruding beyond the top surface of the second substrate such that the exterior side wall of the protrusion section is at a substantially straight angle with respect to the top surface of the second substrate.--

***Allowable Subject Matter***

Claims 1-7 and 9-19 are allowed.

The following is an examiner's statement of reasons for allowance: prior art does not teach or suggest a nozzle body for a liquid droplet spray device for nebulizing a high-viscous liquid substance having a viscosity of at least 4 mPas such as functional liquids, medicated or not, sanitizing or not, fragranced or not, comprising: a first substrate in which a space is formed, a second substrate having one or more nozzle membrane sections and reinforcement sections, wherein said first and second substrates are arranged such to enclose the space, wherein each nozzle membrane section comprises a high-density array of outlet nozzles and output channels that connect said enclosed space with each of said outlet nozzles, said outlet nozzles and said output channels having a tightly-toleranced, straight, non-tapered shape, wherein said second substrate has a top surface in which at least one cavity is formed so as to provide said nozzle membrane section corresponding to the bottom of said cavity with surrounding reinforcement sections, and a bottom surface adjacent to and enclosing said space thus forming a chamber for containing said liquid substance, wherein each nozzle output channel is step-shaped with a wider portion adjacent said space and a thinner portion containing a protrusion section protruding beyond the top surface of said nozzle membrane section of said second substrate such that the exterior side wall of the protrusion section of said output channel is at a substantially straight angle with respect to the top surface of said nozzle membrane section of said second substrate, wherein said space consists of at least two sub-spaces separated by a flexible but leak-tight separation, each sub-space containing a different liquid to be ejected through said

nozzle membrane section, and wherein the different liquids are ejected from different outlet nozzles.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hess et al. (US 2003/0168524 A1) disclose a space consisting of two subspaces separated by a leak-tight separation, each subspace containing a different liquid to be ejected; however, Hess et al. do not disclose the different liquids being ejected from different outlet nozzles.

Refson (US 4193398 A) discloses a membrane separating liquids; however, it discloses only one outlet port; the other port is an inlet port.

Yoshihira et al. (US 20030063162 A1) disclose two separate spaces consisting of two separate liquids; however, Yoshihira et al. do not disclose both liquids being ejected from two separate nozzles.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura E. Martin whose telephone number is (571) 272-2160. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Laura E. Martin

 12/14/07  
MANISH S. SHAH  
PRIMARY EXAMINER